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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Lik Hon

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EXAMINER

CALANDRA, ANTHONY J

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

09/01/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/587,707	<b>Applicant(s)</b> HON, LIK	
	<b>Examiner</b> ANTHONY J. CALANDRA	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 102-144 is/are pending in the application.
- 4a) Of the above claim(s) 144 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 102-143 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☒ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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***Detailed Office Action***

The communication dated 4/30/2009 has been entered and fully considered.

Claims 1-101 have been canceled. Claims 102-144 are new. Claim 144 has been withdrawn from consideration.

***Election/Restrictions***

Claim 144 has been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group II, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/30/2009.

***Priority***

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in China on 4/14/2004. It is noted, however, that applicant has not filed a certified copy of the 2004-0031182.0 application as required by 35 U.S.C. 119(b).

***Inventorship/Oath***

The instant application lists Hon, Lik as the inventor. A copending application 12/226,818 lists Han, Li as the inventor. Both applications are related to electronic smoking apparatuses and very similar names. Further, a later patent application to Hon, Lik, 12/226,819 has the same representative law firm as the Han, Li application, *Maier and Maier*.

It is requested that the applicant confirm whether the inventorship between the Hon, Lik and Han, Li application is the same (for both potential double patenting situations and for prior

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art purposes for later filed applications), and further if the instant spelling of the inventorship is incorrect, that a properly filed corrected oath be submitted.

### ***Claim Interpretation***

The examiner interprets the term ‘cell’ in instant claim one as a battery cell or fuel cell power source for the device.

The examiner interprets the term ‘porous body’ of instant claim 116 and 124 not to just one large cavity but multiple cavities formed by some solid material.

The examiner interprets the term ‘porous body’ of instant claim 131 to be a storage container not just with one large cavity but multiple cavities for containing liquid formed by some solid material inside the storage container.

### ***Allowable Subject Matter***

1. Claims 107-114, 116-134 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of primary reasons for the indication of allowable subject matter: There is no teaching in the art of e-cigarettes of the described pressure sensor with a ripple film, two magnetic steels and a magneto device (either one of a hall, reed switch, diode or triode). There is teaching in the art for a porous cap but there is not a teaching of placing the porous material inside the cigarette solution container or surrounding said contained.

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***Specification***

2. The specification is objected to because of the following:

Applicant states that nicotine is *essentially harmless* in the background art section. This is contradicted by some studies as evidenced by U.S. 2005/0236006 COWAN, hereinafter COWAN [paragraph 0002] which states that nicotine actually metabolizes into harmful substances.

The examiner suggests the following replacement paragraph:

Nicotine is a kind of alkaloid with low molecular weight, ~~a small dose of nicotine is essentially harmless to human body and~~ its half-life in blood is quite short. ~~Actually~~ The major harmful substance in tobacco is tar, tar in tobacco is composed of thousands of ingredients, tens of which are carcinogenic substances. At present it has been proven that passive smoking can be more harmful on non-smokers.

Applicant additionally states that the e-cigarette can be used to quit smoking [pg. 3 lines 8-10]. The examiner knows of no evidence supporting this fact within the instant application. The applicant should re-write this and use qualifiers such as ‘may’ or ‘possibly’ and note that testing is required for this intended use.

Appropriate correction is required.

The specification is also objected to as failing to provide proper antecedent basis for the claimed subject matter of claims 121-123. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Correction of the following is required:

Claim 121 claims the second piezoelectric element as an ‘additional’ sensor provided within the e-cigarette. It is clear from the specification that the term second is intended to mean

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'alternative to' the first piezoelectric element. The second element is mentioned as a different embodiment and the first piezoelectric element is omitted [see e.g. specification pg. 7 lines 15-25].

Claims 122-123 depend upon claim 121 and are similarly objected.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 102-143 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 102 recites the limitation "[the] gas vent" in the final line. There is insufficient antecedent basis for this limitation in the claim. It is not clear what gas vent the applicant is referring to as in the instant claim each of the components listed in sequential order were first mentioned earlier in the claim.

The antecedent basis can be corrected by claiming 'a gas vent' earlier in the claim, see below.

*An electronic atomization cigarette, comprising:*

*a shell;*

*a mouthpiece;*

*an air inlet provided on the external wall of the shell;*

*a cell, an electronic circuit board, a normal pressure cavity, a sensor, a vapor-liquid separator, an atomizer, a liquid-supplying bottle arranged sequentially within the shell*

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*a stream passage provided on one side of the sensor*

*a gas vent;*

*a negative pressure cavity provided in the sensor;*

*an atomization cavity arranged in the atomizer;*

*an aerosol passage provided on one side of the liquid-supplying bottle;*

*wherein the liquid-supplying bottle is in contact with the atomizer; and*

*the air inlet, normal pressure cavity, vapor-liquid separator, atomizer,*

*aerosol passage, gas vent and mouthpiece are sequentially interconnected.*

Claims 103-142 are rejected based on the dependency on instant claim 102.

In instant claim 104, the applicant states that the liquid bottle is arranged between the vapor-liquid separator and the atomizer. This is in direct conflict with the language of the instant independent claim 102 which states the order is V-L separator, atomizer, and then liquid supply bottle arranged sequentially.

Claim 112 recites the limitation "magnetic steel" in lines 5 and 6. There is insufficient antecedent basis for this limitation in the claim. Claim 112 should depend upon claim 107, not 102 to fix the antecedent basis issue.

Claims 113-114, 129, and 130 depend upon claim 112 and are similarly rejected.

In instant claim 126, the applicant uses the acronym 'PTC' but fails to specifically point out in the specification what PTC stands for and fails to point out the limitations by which PTC ceramics are bound. Therefore, the examiner cannot determine the proper metes and bounds of patent protection desired by the applicant.

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 102, 103, 105, 106, 115, and 136-143 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,196,218 VOGES, hereinafter VOGES, in view of U.S. 4,848,374 CHARD, hereinafter CHARD, and U.S. 5,042,470 KANESAKA, hereinafter KANESAKA.

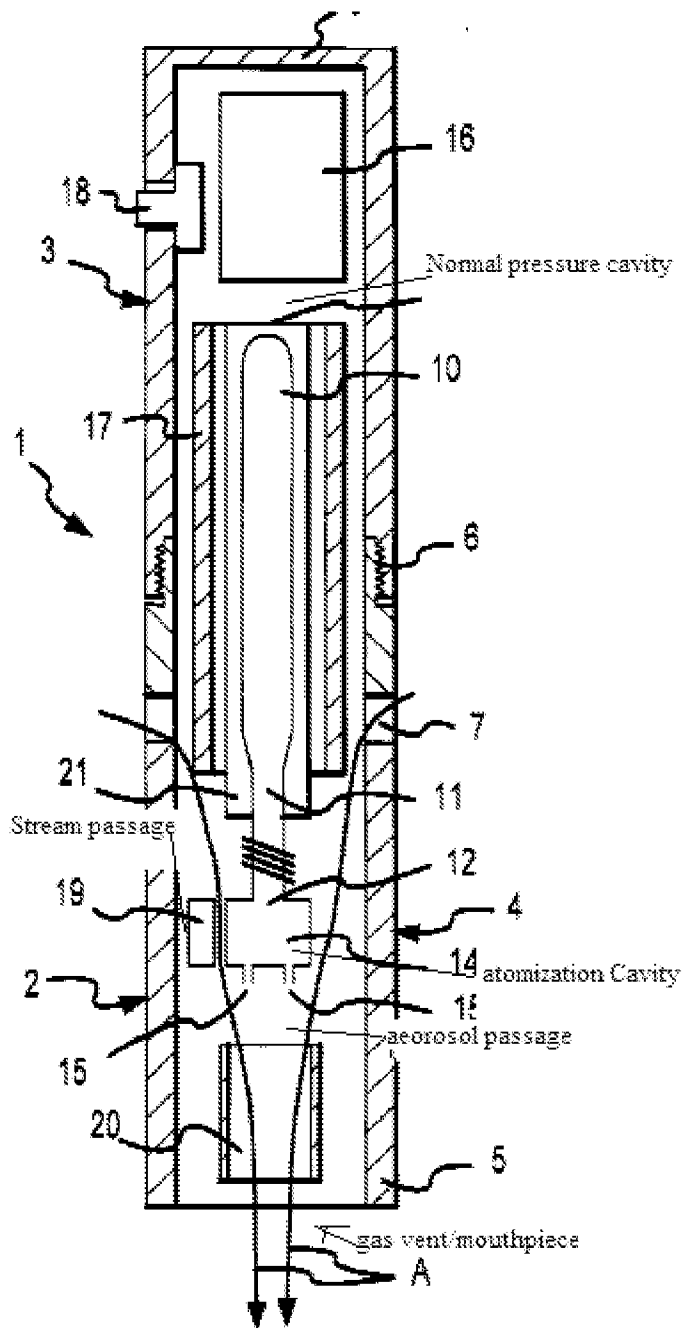
As for claim 102, VOGES discloses an inhaler which may be used as a cigarette [column 3 lines 13-15]. VOGES discloses a shell (2, 3), a mouthpiece with a gas vent (5), with air inlets on the external wall (7) [column 3 line 65 - column 4 line 5]. VOGES further discloses an electronic sensor board controller (16), a cell (battery 17), a normal pressure cavity, and an atomizer (14). VOGES discloses a stream passage and an aerosol passage, which the examiner has interpreted as the space in the e-cigarette of VOGES [Figure 2(a)]. VOGES discloses the



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controller, normal pressure cavity, and then the cell, not cell, controller, normal pressure cavity. However, at the time of the invention it would have been obvious to the person of ordinary skill in the art to move the battery location before or after the controller absent evidence of criticality of location [see e.g. MPEP 2144.04 (VI) (C) Rearrangement of Parts]. The location of the battery is a design choice available to the person of ordinary skill in the art and would have been obvious at the time of invention. The person of ordinary skill in the art would expect the controller and apparatus to be power regardless of location of the battery. VOGES then shows the liquid supply bottle, atomizer and the sensor, which is in contrast to the claim which requires the sensor, atomizer, and then liquid supply bottle. Again, through rearrangement of part it would have been obvious to the person of ordinary skill in the art to change the order of the parts of the e-cigarette absent evidence of criticality [see e.g. MPEP 2144.04 (VI) (C) Rearrangement of Parts]. VOGES does show the normal pressure cavity, atomizer, aerosol passage, gas vent, and mouthpiece in the correct order. VOGES shows the air vent before the atomizer, but not before the normal pressure cavity. At the time of the invention the person of ordinary skill in the art would expect the cigarette to work by moving the air inlet anywhere along the upper body of the e-cigarette.

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VOGES does not disclose a vapor-liquid barrier separating the e-cigarette into two compartments. CEWERS shows controller unit (12) separated from the nebulization chamber by way of an air-liquid barrier [Figure 1]. At the time of the invention it would have been obvious

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to the person of ordinary skill in the art to add an air-liquid barrier of CEWERS to the apparatus of VOGES to separate the battery, processor, and sensor, from the volatilized nicotine solution.

The person of ordinary skill in the art would be motivated to do so to prevent damage (from the vaporized/condensed nicotine solution) and extend the life of the internal electronic components.

VOGES discloses a sensor for detecting pressure changes but does not disclose what type of sensor is used. KANESKA in the ventilation arts discloses a pressure sensor with a diaphragm [column 2 lines 16-25]. The examiner interprets the same behind the diaphragm as the negative pressure cavity. At the time of the invention it would have been obvious to use the conventional pressure measuring diaphragm based sensor of KANESKA in the e -cigarette of VOGES. It is typically *prima facie* obvious to perform a simple substitution. In the instant case the pressure sensor of VOGES is substituted with the diaphragm pressure sensor of KANESKA. The person of ordinary skill in the art would expect success from using wither pressure sensor especially in view of KANESKA which is also related to inhalation matters.

As for claim 103, VOGES discloses the electrical controller controls the signal sent to the dispenser (14) [column 5 lines 1-20] which is a piezoelectric generator operating at a high frequency [column 10 lines 57-58].

As for claim 105, VOGES discloses an LCD screen which is a display. VOGES states that the display screen number of doses remaining and dates since the last dose. It is the Offices position that the screen could also be used to display other information such as smoking times per day [column 7 lines 60-65] and cell capacity remaining which are intended uses of the screen.

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As for claim 106, VOGES discloses a switch in addition to the sensor for operating the apparatus. The apparatus could be filled with a cleaning solution and could be operated to clean the device by pressing the switch without the user being required to inhale (which would be undesirable for a cleaning solution).

As for claim 115, VOGES discloses both the inlet and outlet holes of the atomization chamber, both of which can act as overflows [Figure 2a].

As for claim 137, VOGES discloses that the device can be unscrewed (6) to separate the mouth piece section from the body of the device to put in a new bottle [Figure 2a].

As for claim 136, KANESAKA teaches transducer (20) which is a semiconductor based strain gauge [column 3 lines 16-34].

As for claim 138, VOGES discloses that any suitable means can be used to secure the solution container including a piston [column 4 lines 50-61] and can be threaded or bayoneted into inlet part. The use of a retaining ring for securing the liquid bottle would be obvious to the person of ordinary skill in the art as an equivalent mechanical method for securing a container.

As for claim 139, VOGES discloses that the device can have an LED (27) on the front end shell by controller [column 8 lines 10-13, Figure 5].

As for claims 140-142, VOGES discloses the shape of a cigarette shaped hollow body [column 3 lines 60-65]. VOGES does not disclose the specific shapes of a cigar, pipe, or cigarette holder. However, it is generally *prima facie* obvious to make aesthetic design choices [see e.g. MPEP 1144.04 (I)}. Further, in the instant case VOGES simulates smoking using an electric cigarette. The person of ordinary skill in the art would also be motivated to simulate

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alternate smoking experiences including those of a cigar, pipe, or cigarette held in a cigarette holder.

As for claim 143, the applicant states an intended use. It is the Offices position that the apparatus of VOGES could be used in the instantly claimed manner. Further, nicotine itself can be considered a conventional drug.

5. Claim 135 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,196,218 VOGES, hereinafter VOGES, U.S. 4,848,374 CHARD, hereinafter CHARD, and U.S. 5,042,470 KANESAKA, hereinafter KANESAKA, as applied to claim 102 above, and further in view of U.S. 4,641,053 TAKEDA, hereinafter TAKEDA

VOGES discloses a high frequency oscillating piezoelectric crystal running at 800 to 4000 kHz which falls within the instant claimed range [column 10 lines 55-60]. VOGES discloses that a controller is able to determine the frequency [column 5 lines 1-6] but fails to give any details or diagrams of the internal circuitry. VOGES fails to disclose using a Colpitts oscillator to perform the control the oscillation. TAKEDA discloses an atomization device which uses a piezoelectric crystal controlled by a Colpitts oscillator [column 1 lines 10-15]. At the time of the invention it would have been obvious to the person of ordinary skill in the art to use a Colpitts oscillator to control the piezoelectric circuit of VOGES. The person of ordinary skill in the art would be motivated to use what is known to be a conventional method in the piezoelectric atomization art [column 1 lines 10-15] and that the method of TAKEDA is able to reduce current reflected back to the vibrator [column 1 lines 28-30].

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***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

2005/0016550 KATASA: Intervening reference with FP date. Teaches an e-cigarette with piezoelectrics.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. CALANDRA whose telephone number is (571) 270-5124. The examiner can normally be reached on Monday through Thursday, 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anthony J Calandra/  
Examiner, Art Unit 1791

/Eric Hug/  
Primary Examiner, Art Unit 1791